

Appl. No. 10/506,594  
Supplemental Amendment

**Amendments to the Claims:**

The following listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. -11. (Cancelled)

12. (Currently Amended) A gas discharge impeller for supplying a gas to a molten metal within a container, said impeller comprising:

- a rotatable hollow shaft having a bore, a first end connected to a gas supply and a second end extending upwardly into said container through an opening in the bottom of said container;

- the second end of said shaft including a gas discharge nozzle in fluid communication with said bore, the nozzle being adapted to be submersed in said molten metal when in use; and

- a drive means for rotating the shaft about its longitudinal axis;

characterised in that:

- the rotatable shaft includes a seal for preventing leakage of said fluid through said opening in the container bottom, said seal being in direct sealing engagement with said rotatable shaft and said container to form a liquid seal there-between; and

- wherein said seal comprises a generally annular support and a generally annular bushing, said support including a lower portion extending through said container opening and an upper portion extending into said container, the support upper portion including a support surface to support said bushing and wherein said support and bushing are coaxially provided around the circumference of said shaft second end and wherein said bushing sealingly engages said shaft circumference.

13. (Previously Presented) The impeller of claim 12 further including a means for urging said shaft downwardly against said seal for forming a sealing engagement with said container bottom.

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14. (Cancelled)

15. (Currently Amended) The impeller of claim 12 wherein said support upper portion further includes an outwardly flared shoulder, said shoulder being wider than the container opening for sealingly engaging said container.

16. (Previously Presented) The impeller of claim 15 wherein said support upper portion has a generally conical outer surface.

17. (Previously Presented) The impeller of claim 16 wherein said means for urging comprises a spring.

18. (Previously Presented) The impeller of claim 17 wherein said shaft is provided with at least one bearing beneath the container.

19. (Previously Presented) The impeller of claim 18 wherein the bushing and support are formed from materials chosen from the group consisting of ceramics; carbides; graphite; titanium diboride; tungsten; alumina; zirconium oxide; silicon carbide; silicon nitrate; boron nitrate; titanium carbide; and tungsten carbide.

20. (Previously Presented) The impeller of claim 19 wherein portions of said impeller exposed to said molten metal are formed of a material that repels said molten metal.

21. (Previously Presented) The impeller of claim 19 wherein portions of said impeller exposed to said molten metal are coated with a material that repels said molten metal.

22. (Previously Presented) A system for producing a metal foam from a molten metal comprising:

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- a container containing said molten metal, said container having an opening in the bottom thereof; and
- the impeller according to claim 12.